

Objection to the Drawings

1. *Figure 2 clearly shows the element of claim 6 upon which the Examiner's objection is based.*

In the Office Action on p. 2, section 1, the Examiner states that the adjacency of

5 [the] signal line of the temperature sensor and charge carrier detector must be shown.

This feature is shown in Figure 2, which is a schematic plan view of the temperature-protected semiconductor switch of the present invention. In Figure 2, it can clearly be seen that the signal line of the temperature sensor (SL1) is adjacent to the charge carrier detector (LD).

10 Since this feature is clearly shown in Figure 2, Applicants respectfully request
• that this objection be withdrawn from the application.

35 U.S.C. §112, Second Paragraph, Claim 5 Indefiniteness

2. *The hottest location of a semiconductor body is known to one of ordinary skill in the art—claim 5 indicates that the temperature sensor is attached next to this area of the semiconductor body.*

In the last Office Action, the Examiner indicated that an indication that the temperature sensor is attached next to the hottest location of the semiconductor is indefinite.

The hottest location of the semiconductor body is the location where the highest
20 temperatures occur during operation of the semiconductor switch. The position of this
hottest location within the semiconductor body depends on the layout of the
semiconductor device. However, it is common knowledge to one skilled in the art (who
is a designer of semiconductor switches) where (depending on the layout geometry) the
highest temperatures occur during operation based on numerous factors all well known
25 in the art. The subject matter is therefore clearly defined for the skilled artisan.

Furthermore, for a particular type of device, the location of this area could easily be determined by laboratory testing the device in operation with, for example, a thermometer. This location could then be used for locating the temperature sensor in later manufactured devices.

5 Since this element of claim 5 is known by one of ordinary skill in the art, Applicants respectfully request that the §112 rejection be withdrawn from the application.

35 U.S.C. §102(b), Claims 1, 2, 4, 6-8 and 9 Anticipation by Yamaguchi

3. Yamaguchi does not teach a first signal provided by the temperature sensor

10 and a second signal provided by the charge carrier detector as required by claim 1.

• According to the present invention, the temperature sensor generates a first signal when an excess temperature is present, and a charge carrier detector generates a second signal when free charge carriers occur in the semiconductor body. Thus, two signals are required to be transmitted according to the invention.

15 Yamaguchi does not teach a device that produces two such signals. Figures 3 and 4A-B of Yamaguchi disclose an FET 13 and a directional circuit 20 used for temperature sensing of the FET 13. However, the temperature sensing circuit (20) of Yamaguchi only includes two terminals 28, 29 that provide a temperature signal only by applying voltage to them—thus, only one signal is provided, not two, as required by the 20 present invention. Yamaguchi contains no teaching of providing a signal generated by a charge carrier detector. Applicants are uncertain about which element of Yamaguchi is being equated to the charge carrier detector of the present invention, and request that if the rejection is maintained, the Examiner clearly indicate which element of Yamaguchi equates to the charge carrier detector of the present invention.

25 For this reason, Applicants believes that an element required by claim 1 is not

found in Yamaguchi and thus Yamaguchi cannot be said to anticipate the present invention. Since all remaining claims depend from claim 1, Applicants respectfully request that the §102 rejection be withdrawn from the present application.

35 U.S.C. §102(b), Claims 1-9 Obviousness over Yamaguchi in View of Roth

5 3. *The combination of Yamaguchi and Roth does not teach or suggest a first signal provided by the temperature sensor and a second signal provided by the charge carrier detector as required by claim 1.*

The combination of Yamaguchi and Roth does not obviate the present invention for the reasons argued above with respect to Yamaguchi, and because Roth does not 10 provide a teaching or suggestion for providing a second signal provided by the charge carrier detector. Applicants do not disagree with the Examiner that the Roth reference teaches the well-known use of an exclusive-or logic gate. However, a significant feature of the invention as claimed in claim 1 is providing the two signals from the device, and Roth alone or in combination with Yamaguchi does not provide a teaching or suggestion 15 for a two-signal device.

For these reasons, Applicants assert that the claim language clearly distinguishes over the prior art, and respectfully request that the Examiner withdraw the §103(a) rejection from the present application.

CONCLUSION

Inasmuch as each of the rejections have been overcome by the arguments presented, and all of the Examiner's suggestions and requirements have been satisfied, it is respectfully requested that the present application be reconsidered, the rejections 5 be withdrawn and that this application be passed to issue.

Respectfully submitted,

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20 I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on March 4, 2002.

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